

## ***SUBCHAPTER 10. LABELING, POSTING, AND CONTROLS***

### **7:28-10.1 General requirement**

- (a) All signs and labels required by this Subchapter shall use the conventional radiation caution symbol shaped and colored as follows:
  - 1. Cross-hatched area is to be magenta or purple;
  - 2. Background is to be yellow.
- (b) In addition to the language prescribed in the various sections of this Subchapter, any supplementary information which might be appropriate in aiding individuals to minimize exposure to radiation or to radioactive materials may be provided on or near such required signs or labels.

### **7:28-10.2 Radiation areas**

- (a) Each radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:
  - 1. CAUTION—RADIATION AREA; or
  - 2. DANGER—RADIATION AREA

### **7:28-10.3 High radiation areas**

- (a) Each high radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:
  - 1. CAUTION—HIGH RADIATION AREA; or
  - 2. DANGER—HIGH RADIATION AREA
- (b) Each high radiation area shall be under direct, constant surveillance to protect against unauthorized or accidental entry unless:
  - 1. It is equipped with a control device which shall cause the level of radiation to be reduced below that at which an individual might receive a dose of 100 millirems in one hour upon entry into the area;
  - 2. It is equipped with a control device which shall energize a conspicuous visible or audible alarm signal in such a manner that the individual entering and the owner or the supervisor of the activity are made aware of the entry; or
  - 3. It is locked to protect against unauthorized or accidental entry and the owner or the supervisor of the activity maintains direct personal control over access to the key.

### **7:28-10.4 Airborne radioactivity areas**

- (a) Each airborne radioactivity area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:

1. CAUTION—AIRBORNE RADIOACTIVITY AREA; or
2. DANGER—AIRBORNE RADIOACTIVITY AREA

#### 7:28-10.5 Areas containing radioactive materials

- (a) Each area or room in which radioactive material, other than natural uranium or thorium is used or stored in an amount greater than ten times that listed in Section 10.9 (Labeling, posting and disposal quantities of radioactive material) of this Chapter shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:

1. CAUTION—RADIOACTIVE MATERIAL(S); or
2. DANGER—RADIOACTIVE MATERIAL(S)

- (b) Each area or room in which natural uranium or thorium is used or stored in an amount exceeding 100 times the quantity listed in Section 10.9 (Labeling, posting and disposal quantities of radioactive material) of this Chapter shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:

1. CAUTION—RADIOACTIVE MATERIAL(S); or
2. DANGER—RADIOACTIVE MATERIAL(S)

#### 7:28-10.6 Labeling of equipment and containers

- (a) Any equipment or container in which radioactive material, other than natural uranium or thorium, is transported, stored, or used, in an amount greater than that specifically listed in Section 10.9 (Labeling, posting and disposal quantities of radioactive material) of this Chapter shall bear a durable, clearly visible label bearing the radiation caution symbol and the words:

1. CAUTION—RADIOACTIVE MATERIAL; or
2. DANGER—RADIOACTIVE MATERIAL

- (b) Each container in which natural uranium or thorium is transported, stored, or used in a quantity greater than 10 times the quantity listed in Section 10.9 (Labeling, posting and disposal quantities of radioactive material) of this Chapter shall bear a durable, clearly visible label bearing the radiation caution symbol and the words:

1. CAUTION—RADIOACTIVE MATERIAL; or
2. DANGER—RADIOACTIVE MATERIAL

- (c) Where containers are used for storage, the labels required in this Section shall state also the quantities and kinds of radioactive materials in the containers and the date of measurement of the quantities.

- (d) All radiation-producing machines capable, when operated, of producing a radiation area shall be labeled in a manner which cautions individuals of this fact.

#### 7:28-10.7 Removal of signs and labels

All radiation caution signs and labels which may have been posted at a time when they were required shall be removed when the condition which originally required the posting no longer exists.

#### 7:28-10.8 Exceptions from posting and labeling requirements

- (a) Radiation areas and high radiation areas which result from the operation of therapeutic x-ray machines operated at potentials of 60 kv and below or from the operation of diagnostic x-ray machines shall be exempt from the posting requirements of Sections 10.2, 10.3 and 10.6(d) of this Chapter provided that the operator of the equipment has taken precautions to insure that no individual other than the patient shall be in the radiation area.
- (b) Rooms or other areas in hospitals are not required to be posted with radiation caution signs because of the presence of patients containing radioactive material provided that there are personnel in attendance who shall take the precautions necessary to prevent the exposure of any individual other than the patient to radiation or radioactive material in excess of the limits established in this Chapter.
- (c) A room or area is not required to be posted with a radiation caution sign because of the presence of a sealed source provided the radiation level 12 inches from the surface of the source container or source housing does not exceed five millirems per hour.
- (d) Radiation caution signs are not required to be posted at areas or rooms containing radioactive materials for periods of less than eight hours provided that:
  - 1. The materials are constantly attended during such periods by an individual who shall take the precautions necessary to prevent the exposure of any other individual to radiation or radioactive materials in excess of the limits established in these regulations; and
  - 2. Such area or room is subject to the user's control.
- (e) Laboratory containers such as beakers, flasks and test tubes need not be labeled if they are being used transiently in laboratory procedures when the user is present.
- (f) A container in which radioactive material is transported, stored, or used need not be labeled, if the concentration of the material in the container does not exceed that specified in Section 6.5(a) (Average concentrations) of this Chapter, Column A.

- (g) Radioactive materials packaged and labeled in accordance with regulations of the appropriate Federal agency shall be exempt from the labeling and posting requirements of this Section during shipment, provided that the inside containers are labeled in accordance with the provisions of Section 10.6 (Labeling of equipment and containers) of this Chapter.

7:28-10.9 Labeling, posting and disposal quantities of radioactive materials

- (a) Microcuries table is as follows:

\*\*\*\*\*TABLE OMITTED\*\*\*\*\*

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- (b) For purposes of Section 10.5 (Areas containing radioactive material) and 10.6 (Labeling of equipment and containers), where there is involved a combination of isotopes in known amounts, the limit for the combination shall be derived by determining for each isotope in the combination, the ratio between the quantity present in the combination and the limit otherwise established for the specific isotope when not in combination. The sum of such ratios for all the isotopes in the combination may not exceed "1" ("unity").